REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 2-7 and 9-16 are active in the present application. Claims 1 and 8 have been canceled without prejudice or disclaimer. Claims 2 and 9 have been placed in independent form and amended. Support for the amendment can be found at least on page 15, lines 3-12 of the specification. Claims 15 and 16 are newly added. Support for newly added claims can be found at least on page 11, line 25 to page 16, line 13 and Figure 5 of the specification. No new matter is added.

By way of summary, the Official Action presents the following issues: the drawings are objected to under MPEP § 608.02(g); Claims 1 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Konishi et al. (U.S. Patent No. 6,208,385, hereinafter Konishi) in view of Admitted Prior Art (Figures 1-4); Claims 1, 3-8, and 10-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Markandey (U.S. Patent No. 6,340,992) in view of Admitted Prior Art (Figures 1-4); and Claims 2 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Markandey in view of Admitted Prior Art (Figures 1-4) and further in view of Hiroi (U.S. Patent No. 6,204,887).

OBJECTIONS TO THE DRAWINGS

The Official Action objected to the drawings under M.P.E.P. § 608.02(g) as lacking a "prior art" designation. Applicants submit herewith a separate Letter Submitting Replacement Drawing Sheet(s) that includes an amendment to Figures 1, 2A, 2B, 3A-3C, and 4A-4B, designating Figures 1, 2A, 2B, 3A-3C, and 4A-4B as prior art.

REJECTION UNDER 35 U.S.C. § 103

The Official Action has rejected Claims 1 and 8 under 35 U.S.C. § 103(a) as being unpatentable over Konishi in view of Admitted Prior Art (APA). As Claims 1 and 8 have been canceled, Applicant respectfully submits that the rejection pertaining to these claims outlined in paragraph 3 of the Official Action has been rendered moot.

The Official Action has rejected Claims 1, 3-8, 10-14 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Markandey and Applicant's APA. The Official Action states Markandey in view of APA taught the invention recited in the Applicant's claims. As Claims 3-7 and 10-14 now depend from the subject matter of original Claims 2 and 9, Applicant submits that these claims are allowable at least for these reasons, thus further discussion of this rejection is unnecessary.

The Official Action has rejected Claims 2 and 9 under 35 U.S.C. § 103(a) as being unpatentable over Markandey in view of APA further in view of Hiroi. The Official Action states the combination of Markandey, APA, and Hiroi teach the invention recited in the Applicant's claims. Applicant respectfully traverses the rejection.

Amended Claim 2 recites, *inter alia*, a picture processing apparatus including:

> "picture processing means for extracting a signal of the effective picture area from the input video signal, adjusting the picture size using the signal of the effective picture area, and combining the picture ...,
> wherein said picture processing means performs a multiple-picture displaying process for adjusting the picture sizes ... and combining pictures ... interpolated at proper timings so that desired picture sizes are obtained corresponding to the display positions on the background screen."

By way of background, television receivers can perform both a multiple-picture display in which a plurality of pictures are displayed in a row on a background screen and a reduced picture display in which a reduced picture is displayed along with an on-screen picture such as text.

Video signals, such as letter box signals or side panel signals, may contain non-picture portions. A side panel signal has non-picture portions on the left and right of the picture. On the other hand, a letter box signal has non-picture portions at the top and bottom of the picture. Thus, when an input video signal is written to the picture memory and read therefrom at a proper timing corresponding to the screen position in a predetermined picture size, if the input video signal is a letter box signal or a side panel signal, the non-picture portions are also processed. Thus, when a multiple-picture displaying process is performed, the picture of the side panel signal or letter box signal becomes small. On the other hand, when the reduced picture displaying process is performed, the display area on the screen is not used effectively.[1]

In part, due to the above deficiency in the art, the present invention is provided. With this object in mind, a brief comparison of the claimed invention, in view of the cited references, is believed to be in order.

Markandey teaches the automatic detection of letterbox images using a method comprising the steps of receiving video image data, calculating image statistics for each line of the video image, locating a desired portion of the image, and scaling the desired portion of the video image for display on a device having a predetermined aspect ratio.[2] A video source (102) outputs a letterbox video signal to a signal and format detection processor (202).[3] The signal and format detection processor (202) measures characteristics of the video signal to determine if the video signal is letterboxed.[4] After detecting the size and location of the desired image, the signal and format detection processor 202 scales the video signal to optimally fill the useable area of a display having a pre-determined aspect ratio.[5]

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[1] Applicant's Specification, page 4, lines 8-16.
[2] Markandey, column 2, lines 12-19.
[3] Id., column 3, lines 40-43.
[4] Id., column 3, lines 46-50.
[5] Id., column 3, lines 50-54.

Hiroi teaches an apparatus and methods for decoding multiple images to be displayed using limited resources. A CPU (110) receives encoded digital video signals and information from input device (104) which receives user input representing channel selections or window size information.[6] The video signals are stored in video memory (130), combined into a single frame, and later displayed.[7] Hiroi, notes that it usually takes less data and less resources to represent a small image, and therefore if resources become limited Hiroi discloses reducing the window size of an image.[8]

Conversely, Applicant's invention provides an apparatus and method combining multiple input video signals so images utilize all of their respective image areas in a multiple-picture display mode.

In an exemplary embodiment of the Applicant's invention, multiple input video signals are received by the picture processing apparatus as shown in Figure 5. A data processor (5) determines whether or not an input video signal has a non-picture portion added to the periphery of the effective picture area. In operation, the picture processor (7) performs a process for placing pictures corresponding to multiple video signals at proper positions on a display (13) as shown in Figures 7C and 10D.[9] This process is performed by extracting a signal of the effective picture area from the input video signals for images having non-picture portions and interpolating the video signals at proper timings so that the effective image areas are displayed.[10] Therefore, since the method and apparatus of the claimed invention combines the effective image areas, the images do not become excessively small during the multiple-picture display process by virtue of their non-picture portions. In this way, each respective portion of the multiple picture image areas is effectively used in its entirety during

[6] Hiroi, column 3 lines 62-65 and column 4, lines 14-20.
[7] Id., column 4, lines 27-36.
[8] Id., column 6, lines 45-56.
[9] Id. at least at page 14, lines 6-15.
[10] Id. at least at page 14, line 25 to page 15 line 2.

a multiple-picture display process as the letterbox and side panel portions of the image sources are not shown in the imaging area.

As stated above, Markandey teaches the automatic detection of letterbox images and is directed towards optimally matching a video source with a display device.[11] Markandey does not teach or suggest combining multiple pictures of different formats and aspect ratios on a single display in a plurality of corresponding image areas. For example, Markandey cannot process both letterbox and side panel formats, thus it cannot interpolate at proper timings to adjust for different formats as recited in amended Claim 2. Therefore, Markandey does not teach or suggest a picture processing apparatus as recited in amended Claim 2, which adjusts picture sizes and combines pictures interpolated at proper timings so that the effective picture area is extracted and displayed during a multiple-picture display process.

Hiroi teaches an apparatus and methods for decoding multiple images to be displayed using limited resources. Hiroi, does not remedy the deficiency discussed above with reference to Markandey.

Claim 9 recites substantially the same limitations distinguished above, and therefore, is likewise allowable. Accordingly, in view of the present amendment and in light of the above discussion it is respectfully requested that the rejection of amended Claims 2 and 9 under 35 U.S.C. § 103(a) be withdrawn.

NEW CLAIMS

New Claims 15 and 16 recite a picture processing apparatus including at least the above distinguished features and including further patentable subject matter not disclosed or suggested by any of the references of record. Accordingly, Applicants respectfully submit that these claims are likewise allowable.

[11] Id., column 3, lines 50-54.

CONCLUSION

Consequently, in view of the current amendments and in light of the above discussion, it is respectfully submitted that the present application, including Claims 2-7 and 9-16, is patentably distinguished over the prior art, in condition for allowance, and such action is respectfully requested at an early date.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
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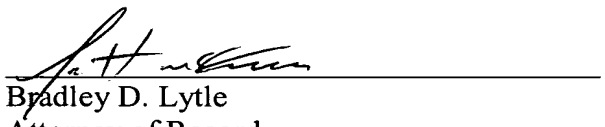

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